

**STUDY PROGRAMME - Part A**

**I. GENERAL INFORMATION**

1. Setting the field of studies in discipline/scientific disciplines, which the learning outcomes refer to: physical sciences, astronomy, automation, electronics and electrical engineering, mathematics, computer science, biological sciences, chemical sciences, medical sciences, legal studies, management and quality-control studies, security and safety studies, physical education, language studies, history.
2. Name of the field of study: *Physics*
3. Specializations offered: *Medical physics*
4. Level of education: *first degree studies*
5. Educational profile: *General academic*
6. Form of study: *full time*
7. A number of semesters: **6**
8. Total number of ECTS points required to achieve the equivalent level of relevant qualifications: **180**
9. Total number of teaching hours: **2298**
10. Programme is effective from the academic year: **2019/2020**

**II. EDUCATION MODULES**

Modules (module code: MK_1 and module name)	Field learning outcomes  Knowledge Skills Social competence (symbols)	Teaching methods and verification	Courses/modules	a number of ECTS points per course/modul	QUANTITATIVE INDICATORS - ECTS points included in courses:						
					that require direct participation of teachers or other people conducting the classes	in basic science specific for a given field of study, which learning outcomes for a given field, level and profile of education refer to	classes shaping practical skills/classes connected with scientific activity conducted at the university in discipline/disciplines, which the field of study is assigned to	in discipline of humanities or social sciences (min. 5 ECTS points) - for the fields from other discipline of science*	in a foreign language (language classes)	in apprenticeships	that are elective
MK_1 (Foundations of physics)	K_W01,K_W02, K_W03 K_W04, K_W05, K_W08, K_W09, K_W10, K_W11, K_W12, K_W13, K_W14,K_W15, K_W16, K_W17, KW_18, K_W19, K_W20, K_W29, K_U01, K_U02, K_U06, K_U07,K_U08, K_U09,K_U10, K_U11, K_U12, K_U13, K_U14, K_U15,K_U16, K_U17, K_U18, K_01, K_K02, K_K03, K_K04, K_K05, K_K06	Egzamin lub zaliczenie w formie ustnej i/lub pisemnej lub indywidualny projekt zaliczeniowy/egzaminacyjny lub zbiorowy projekt zaliczeniowy/egzaminacyjny.	Introduction to physics	9,0	6,0	9,0	0,6				
			Classical Mechanics	8,0	5,4	8,0	1,2				8,0
			Analysis of the Experimental Uncertainty	2,0	1,8	2,0	0,6				
			Electricity and magnetism with optics	8,0	5,4	8,0	1,2				8,0
			Thermodynamics	8,0	5,4	8,0	1,2				8,0
			Astronomy	2,0	1,8	2,0	0,6				2,0
			Structure of matter	6,0	3,9	6,0	0,3				6,0
<b>suma</b>	<b>43,0</b>	<b>29,7</b>	<b>43,0</b>	<b>5,7</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>32,0</b>			

MK_2 (Mathematical tools)	K_W08 K_W12, K_W13 K_U14 K_U15 K_U16 K_U17 K_U18 K_K02	Egzamin lub zaliczenie w formie ustnej i/lub pisemnej lub indywidualny projekt zaliczeniowy/egzaminacyjny lub zbiorowy projekt zaliczeniowy/egzaminacyjny.	Introduction to mathematics	6,0	4,2	6,0						
			Differential and integral calculus I	5,0	3,6	5,0					5,0	
			Differential and integral calculus II	6,0	4,2	6,0					6,0	
			Algebra with geometry	6,0	4,2	6,0						
			Statistical data analysis	5,0	3,6	5,0	1,8					
			<b>suma</b>	28,0	19,8	28,0	1,8	0,0	0,0	0,0	11,0	
MK_3 (Chosen problems of theoretical physics)	K_W10, K_W12, K_W17, K_W18, K_W20, K_U05, K_U09, K_U10, K_U11, K_U14, K_U15, K_U17, K_K02		Elements of classical electrodynamics	6,0	3,6	6,0					6,0	
			Elements of quantum mechanics	6,0	3,6	6,0					6,0	
			<b>suma</b>	12,0	7,2	12,0	0,0	0,0	0,0	0,0	12,0	
MK_4 (Tools of computer science)	K_W14 K_W15 K_W16 K_U17 K_U19 K_U20 K_K01 K_K04		Computer tools	3,0	2,4	3,0	1,2					
			Computer-aided computations	3,0	1,2	3,0	1,2					
			Programming I	5,0	3,0	5,0	1,8					
			Programming II	5,0	3,0	5,0	1,8					
			Algorithms and data structures	5,0	3,0	5,0	1,8					
			<b>suma</b>	26,0	15,6	26,0	9,6	0,0	0,0	0,0	0,0	
MK_5 (Applications of physics in medicine and technology)	K_W11 K_U01 K_U02 K_U12 K_U13 K_U17 K_U19 K_K01 K_K03		Electronics	5,0	3,6	5,0	1,8					
			Physics in medicine I	2,0	1,8	2,0						
			Physics in medicine II	2,0	1,8	2,0						
			Equipment of medical diagnostics and therapy	3,0	2,0	3,0	1,2					
			<b>suma</b>	12,0	9,2	12,0	3,0	0,0	0,0	0,0	0,0	
MK_6 (Practical and specialist education)	K_W01 K_W21 K_W22 K_W23 K_W24 K_U21 K_U22 K_U23 K_U25 K_K01 K_K02 K_03 K_K04 K_K06		Elements of chemistry	3,0	2,4	3,0	0,6					
			Cell physiology and histology	3,0	2,4	3,0	0,0					
			Human anatomy and physiology	3,0	2,4	3,0	0,0					
			Introduction to biophysics	4,0	3,0	4,0	1,2					
			Radionuclids in medicine	3,0	2,4	3,0	0,6					
			Image diagnostics	2,0	1,8	2,0	0,6					
			Elements of histopatology	2,0	1,8	2,0	0,0					
			Radiation hygiene	2,0	1,8	2,0	0,0					
			<b>suma</b>	22,0	18,0	22,0	3,0	0,0	0,0	0,0	0,0	

MK_7 (General education)	K_W25 K_W27 K_W32 K_U22 K_U24 K_U32, K_U33 K_K01 K_K05 K_K03 K_K07	Foreign language course	6,0	4,8	6,0			6,0		
		Physical exercises	0,0	0,0	0,0					0,0
		Ethic and law in medicine	1,0	1,0	1,0		1,0			
		Quality management	1,0	1,0	1,0		1,0			
		Basics of entrepreneurship	2,0	2,0	2,0		2,0			
		History of physics	3,0	1,8	3,0		3,0			3,0
		Legal aspects of scientific and professional activity	1,0	1,0	1,0		1,0			
<b>suma</b>			14,0	11,6	14,0	0,0	8,0	6,0	0,0	3,0
MK_8 (Recapitulation of learning)	K_W01 K_W04, K_U01, K_U02, K_K01, K_K04, K_K03 K_K05, K_K06	Elements of contemporary physics	3,0	1,8	3,0	1,2				
		Diplomma seminar	16,0	3,2	16,0	12,8				16,0
<b>suma</b>			19,0	5,0	19,0	14,0	0,0	0,0	0,0	16,0
MK_9 (Practical Training)		Practical Training	4,0	4,0	4,0	4,0			4,0	4,0
		<b>suma</b>			4,0	4,0	4,0	4,0	0,0	0,0
MK_10 (Elective)		Monographic lecture *	<i>a</i>	<i>a</i>						<i>a</i>
		Lecture on the other Faculty	<i>a</i>							<i>a</i>
<b>total</b>										
<b>TOTAL NUMBER OF ECTS points for ALL MODULES</b>			180,0	120,1	180,0	41,1	8,0	6,0	4,0	78,0

\* refers to the fields that are not assigned to the disciplines of humanities or social sciences

*a* Number of the ECTS credits, time of realisation, type (lecture, exercise, etc) of subject depend on the offer

**III PROPORTIONAL INDICATORS (percentage)**

1. Percentage share of ECTS points for the classes that require direct participation of teachers or other people conducting classes:	67%
2. Percentage share of ECTS points earned for elective modules (min. 30%):	43%
3. Percentage share of ECTS points earned for the classes conducted in a foreign language (in a total number of ECTS points envisaged by the study programme):	a) 50%
4. Percentage share of ECTS points earned for the modules of classes shaping practical skills for practical educational profiles (above 50%):	nie dotyczy
5. Percentage share of ECTS points earned for the modules of classes connected with scientific activity conducted at the university in discipline/disciplines, to which the field of study is assigned for general academic profile (above 50%):	62,0%
6. Percentage shares of individual (all) discipline of science, which the study programme refers to:	62,0%
a) physical sciences	
b) astronomy	0,6%
c) automation, electronics and electrical engineering	1,4%
d) mathematics	12,4%
e) computer science	8,9%
f) biological sciences	3,6%
g) chemical sciences	1,7%
h) medical sciences	2,6%
i) legal sciences	1,1%
j) management and quality-control studies	1,3%
k) security and safety studies	0,3%
l) physical education	0,0%
m) language studies	3,3%
n) history	0,8%

**IV. CONDITIONS OF GRADUATION AND CONFERRED PROFESSIONAL TITLE**

Student is obliged to get at least 180 ECTS credits and pass a bachelor's exam.